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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,249	06/26/2003	Masayuki Kurano	01464D/LH	7759
1933	7590	02/20/2004	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 767 THIRD AVENUE 25TH FLOOR NEW YORK, NY 10017-2023			DOUGHERTY, THOMAS M	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.	10/609,249	
Examiner	KURANO ET AL.	
Thomas M. Dougherty	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 26 June 2003.  
2a) This action is FINAL.                    2b) This action is non-final.  
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-22 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) Claim(s) \_\_\_\_\_ is/are allowed.  
6) Claim(s) 1-22 is/are rejected.  
7) Claim(s) \_\_\_\_\_ is/are objected to.  
8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.  
10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. 09/921,319.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 603.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) Notice of Informal Patent Application (PTO-152)  
6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ageishi (US 4,733,447). Ageishi notes (col. 4, ll. 20-35) a microactuator device having a cut face formed by cutting, wherein said cut face is subjected to anti-release treatment for preventing release of particles produced by cutting.

Said anti-release treatment is carried out by baking an entire surface of said microactuator device including said cut face to form a sintered image after cutting into a final product shape.

Said anti-release treatment is carried out by polishing an entire surface of said microactuator device including said cut face formed by cutting after baking.

Said anti-release treatment is carried out by reheating an entire surface of said microactuator device including said cut face formed by cutting after baking to thereby refix said particles to said entire surface.

Said anti-release treatment is carried out by exclusively heating said cut face formed by cutting after baking to thereby refix said particles to said cut face.

Said anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles.

Said anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles.

Said anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles.

Said anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles.

Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Salatino (US 6,291,317). Salatino notes (ABSTRACT) a microactuator device having a cut face formed by cutting, wherein said cut face is subjected to anti-release treatment for preventing release of particles produced by cutting.

Said anti-release treatment is carried out by polishing an entire surface of said microactuator device including said cut face formed by cutting after baking.

Claims 1 and 2 are rejected under 35 U.S.C. 102(a) as being anticipated by Nishizawa et al. (JP 2000-357627). Nishizawa et al. notes (SOLUTION, II. 5-8) a microactuator device having a cut face formed by cutting, wherein said cut face is subjected to anti-release treatment for preventing release of particles produced by cutting.

Said anti-release treatment is carried out by baking an entire surface of said microactuator device including said cut face to form a sintered image after cutting into a final product shape.

Claims 1 and 10 are rejected under 35 U.S.C. 102(a) as being anticipated by Christel et al. (US 6,368,871). Christel et al. note (col. 11, ll. 19-29) a microactuator device having a cut face formed by cutting, wherein said cut face is subjected to anti-release treatment for preventing release of particles produced by cutting.

Said anti-release treatment is carried out by coating said cut face formed by cutting after baking with a glass to avoid exposure of said cut face.

Claims 1 and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Brown (US 6,037,168). Brown notes (col. 12, ll. 20-28) a microactuator device having a cut face formed by cutting, wherein said cut face is subjected to anti-release treatment for preventing release of particles produced by cutting.

Claims 1-3 and 12-14 are rejected under 35 U.S.C. 102(a) as being anticipated by Takeuchi et al. (US 6,534,899). Takeuchi et al. note (col. 25, ll. 1-6) a microactuator device having a cut face formed by cutting, wherein said cut face is subjected to anti-release treatment for preventing release of particles produced by cutting.

Said anti-release treatment is carried out by baking an entire surface of said microactuator device including said cut face to form a sintered image after cutting into a final product shape. See col. 29, ll. 42-47.

Said anti-release treatment is carried out by polishing an entire surface of said microactuator device including said cut face formed by cutting after baking.

Said microactuator device comprises (fig. 1) a multilayer structure which includes a plurality of piezoelectric elements and a plurality of internal electrodes alternately laminated and which has said cut face.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ageishi (US 4,733,447) in view of Takeuchi et al. (US 6,534,899). Given the invention of Ageishi as noted above, he fails to show a multilayer structure which includes a plurality of piezoelectric elements and a plurality of internal electrodes alternately laminated and which has said cut face.

Given the invention of Takeuchi et al. as noted above, they fail to show their anti-release treatment is carried out by reheating an entire surface of said microactuator device including said cut face formed by cutting after baking to thereby refix said particles to said entire surface; their anti-release treatment is carried out by exclusively heating said cut face formed by cutting after baking to thereby refix said particles to said cut face; their anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles; their anti-release treatment is followed by washing of an entire surface of said microactuator device

including said cut face to remove said particles; their anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles; their anti-release treatment is followed by washing of an entire surface of said microactuator device including said cut face to remove said particles.

It would have been obvious to one having ordinary skill in the art to use the methods of manufacturing the device of Ageishi in the device of Takeuchi et al. at the time their invention was made since no new methods of manufacturing would be required, thus saving on design costs.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fuhaki et al. ('464) also teach methods of making microactuators.

Direct inquiry concerning this action to Examiner Dougherty at (571) 272-2022.

*tmd*  
tmd

February 11, 2004

*Thomas M. Dougherty*  
THOMAS M. DOUGHERTY  
PRIMARY EXAMINER  
GROUP 2800